

REMARKS

Claims 1-22, 24, 26-39, 41-59, 61, 62, 64, and 65 are pending in this application, and Claims 26-39, 41-49, 62, 64, and 65 are under consideration. Claim 62 is the only independent claim under consideration. Claim 62 has been amended.

Claim 62 has been rejected as containing new matter. Without conceding the propriety of this rejection, Applicants have amended this claim as shown above. Support for the amendments may be found at least at pages 4-5 and 20-21 of the present specification.

Claims 28, 30, 31, and 62 stand rejected under 35 U.S.C. § 102(e)/103(a) over Shackle (U.S. Pat. No. 5,721,070), which allegedly shows a modified olivine compound having the formula  $\text{LiMn}(\text{VO}_4)$ . Applicants again submit that this compound does not have a modified olivine structure, and in support of this position, Applicants have submitted an article published by several of the Applicants in 1997. See A.K. Padhi, et al., "Ambient and High-Pressure Structures of  $\text{LiMnVO}_4$  and Its  $\text{Mn}^{3+}/\text{Mn}^{2+}$  Redox Energy," *J. Solid State Chemistry*, 128:267-272 (1997). On page 271 of the article, it is noted that  $\text{LiMn}(\text{VO}_4)$  exists in two forms: an ambient-pressure isostructural form, and a high-pressure cubic spinel phase. Accordingly, Applicants again submit that Shackle does not show a modified olivine compound having the claimed formula.

In view of the above claim amendments and arguments, Applicants respectfully request favorable consideration of this application.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3507. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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#27***MARK-UP VERSION OF THE CLAIMS:**

62. (Amended) A cathode material for a rechargeable electrochemical cell, said cell also comprising an anode and an electrolyte, the cathode material comprising a compound of the ordered or modified olivine structure having the formula:



wherein:

M is a cation of a metal selected from the group consisting of Fe, Mn, Co, Ti, Ni or mixtures thereof;

[M is a dopant cation selected from the group consisting of  $Mg^{2+}$ ,  $Ni^{2+}$ ,  $Co^{2+}$ ,  $Zn^{2+}$ ,  $Cu^{2+}$ ,  $Ti^{2+}$ ,  $Al^{3+}$ ,  $Ti^{3+}$ ,  $Cr^{3+}$ ,  $Fe^{3+}$ ,  $Mn^{3+}$ ,  $Ga^{3+}$ ,  $Zn^{3+}$ ,  $V^{3+}$ ,  $Ti^{4+}$ ,  $Ge^{4+}$ ,  $Sn^{4+}$ ,  $V^{4+}$ ,  $V^{5+}$ ,  $Nb^{5+}$ ,  $Ta^{5+}$  and mixtures thereof;]

D is a metal having a +2 oxidation state selected from the group consisting of  $Mg^{2+}$ ,  $Ni^{2+}$ ,  $Co^{2+}$ ,  $Zn^{2+}$ ,  $Cu^{2+}$ , and  $Ti^{2+}$ ;

T is a metal having a +3 oxidation state selected from the group consisting of  $Al^{3+}$ ,  $Ti^{3+}$ ,  $Cr^{3+}$ ,  $Fe^{3+}$ ,  $Mn^{3+}$ ,  $Ga^{3+}$ ,  $Zn^{3+}$ , and  $V^{3+}$ ;

Q is a metal having a +4 oxidation state selected from the group consisting of  $Ti^{4+}$ ,  $Ge^{4+}$ ,  $Sn^{4+}$ , and  $V^{4+}$ ;

R is a metal having a +5 oxidation state selected from the group consisting of  $V^{5+}$ ,  $Nb^{5+}$ , and  $Ta^{5+}$ ;

X comprises Si, S, P, V, or mixtures thereof;

[0 ≤ y ≤ 0.2

with the characteristic that x and y are selected to ensure electroneutrality of the compound]

0 < x < 1; and

0 < d, t, q, r < 1, where at least one of d, t, q, and r is  
not 0.